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HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

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| EXAMINER |
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PUENTE, EMERSON C

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| ART UNIT | PAPER NUMBER |
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2113

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 14

Application Number: 09/513,010
Filing Date: February 25, 2000
Appellant(s): HUANG ET AL.

John M. Dahl
Reg. No. 44,639
For Appellant

MAILED
JAN 15 2004
Technology Center 2100

EXAMINER'S ANSWER

This is in response to the appeal brief filed 24 November 2003.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1-10 and 31-52 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

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| | | |
|-----------|--------|---------|
| 5,153,874 | Kohno | 10-1992 |
| 6,434,117 | Momona | 8-2002 |

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-9, 31-40, and 42-51 are rejected under 35 U.S.C. 102(b). Claims 10, 41, and 52 are rejected under 35 U.S.C. 103(a). This rejection is set forth in prior Office Action, Paper No. 9.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 31-40, and 42-51 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by US Patent No. 5,153,874 of Kohno et al. referred hereinafter “Kohno”.

In regards to claims 1, Kohno discloses a method of managing the state of a computer network with redundant network connections, comprising:

determining the state of a primary network connection between each pair of network nodes (see figure 3 and 4; see column lines 35-52);

determining the state of a redundant network connection between each pair of network nodes (see figure 3 and 4; column 3 lines 35-52);

selecting either the primary network connection or the redundant network connection for sending and receiving data between each pair of network nodes, such that the network path selected to be used to communicate is selected independently based on the determined network states for each pair of network nodes (see column 3 lines 5-7).

In regards to claims 2, Kohno discloses a method further comprising building a network status table that indicated results of determining the state of the primary and redundant network connections between each pair of network nodes (see figure 4).

In regards to claim 3, Kohno discloses a method wherein the network status table comprises data representing network status based on data received at a node from other network nodes (see figure 4 and column 3 lines 40-47).

In regards to claim 4, Kohno discloses a method wherein the data received at a node from other networked nodes comprises a diagnostic message (column 3 lines 3-12).

In regards to claim 5, Kohno discloses a method wherein the data received at a node from other network nodes comprises data representing the ability of the other nodes to receive data from other different network nodes (see figure 4 and column 3 lines 43-47).

In regards to claims 6 and 7, Kohno discloses a method wherein the network status table comprises data representing network status based on a node's ability to send data to other nodes (see figure 4 and column 3 lines 43-47).

In regards to claim 8, Kohno discloses a method wherein selecting the primary or redundant network connection for communication between each pair of network nodes comprises:

- selecting the primary network connection if the state of the primary network connection is determined to be operable; and

- selecting the redundant connection if the state of the primary network connection is determined to be inoperable

Kohno states the use of a switch means such that the receiving circuit is connected to a normal transmission line when abnormality is decided (see column 3 lines 25-30), indicating a switch from the primary network connection to a secondary network connection when the primary connection is inoperable or abnormal.

In regards to claim 9, Kohno discloses a method wherein selecting the primary or redundant network connection for communication between each pair of network nodes comprises:

- selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

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selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

Kohno states the use of a switch means such that the receiving circuit is connected to a normal transmission line when abnormality is decided (see column 3 lines 25-30), indicating a switch from the primary network connection to a secondary network connection when the primary connection is not operable or abnormal. Thus, it is implied that there is a primary network connection to transmit and receive data upon determination that the network connection is operable and a redundant network connection to transmit and receive data upon determination the network connection is inoperable.

In regards to claim 31, Kohno discloses a method wherein determining the state of connections between each pair of network nodes comprises determination of whether each node in a pair of network nodes can send data to the other node and can receive data from the other node in the pair. Kohno states the use of an abnormal test circuit to check if the transmission line is normal or operable, thus determining whether each node in a pair can send and receive data to the other (see column 2 lines 58-69 and column 3 lines 1-4). Upon determination that the transmission line between a pair is abnormal or inoperable, it is understood that data cannot be sent and received between each node in the pair.

In regards to claims 32, Kohno discloses a computer network interface, the interface operable to:

determining the state of a primary network connection between the network interface and the network interfaces of other network nodes (see figure 3 and 4; see column lines 35-52);

determining the state of a redundant network connection between the network interface and the network interfaces of other network nodes (see figure 3 and 4; column 3 lines 35-52);

selecting either the primary network connection or the redundant network connection for communication with each pair of network nodes, such that the network connection selected is

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selected independently based on the determined network states for each other network nodes (see column 3 lines 5-7).

In regards to claims 33, Kohno discloses a computer network interface further comprising a network status table that indicated results of the determination of the state of the primary and redundant network connections between the computer network interface and the interface of other network nodes (see figure 4).

In regards to claim 34, Kohno discloses a network interface wherein the network status table comprises data representing network status based on data received at a node from other network nodes (see figure 4 and column 3 lines 40-47).

In regards to claim 35, Kohno discloses a network interface wherein the data received at a node from other network nodes comprises a diagnostic message (column 3 lines 3-12).

In regards to claim 36, Kohno discloses a network interface wherein the data received at a node from other network nodes comprises data representing the ability of the other nodes to receive data from other different network nodes (see figure 4 and column 3 lines 43-47).

In regards to claims 37 and 38, Kohno discloses a network interface wherein the network status table comprises data representing network status based on a node's ability to send data to other nodes (see figure 4 and column 3 lines 43-47).

In regards to claim 39, Kohno discloses a network interface wherein selecting the primary network connection or redundant network connection for communication between each pair of network nodes comprises:

- selecting the primary network connection if the state of the primary network connection is determined to be operable; and

- selecting the redundant connection if the state of the primary network connection is determined to be inoperable

Kohno states the use of a switch means such that the receiving circuit is connected to a normal transmission line when abnormality is decided (see column 3 lines 25-30), indicating a switch from the primary network connection to a secondary network connection when the primary connection is inoperable or abnormal.

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In regards to claim 40, Kohno discloses a network interface wherein selecting the primary or redundant network connection for communication between each pair of network nodes comprises:

- selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

- selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

- selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

- selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

Kohno states the use of a switch means such that the receiving circuit is connected to a normal transmission line when abnormality is decided (see column 3 lines 25-30), indicating a switch from the primary network connection to a secondary network connection when the primary connection is not operable or abnormal. Thus, it is implied that there is a primary network connection to transmit and receive data upon determination that the network connection is operable and a redundant network connection to transmit and receive data upon determination the network connection is inoperable.

In regards to claim 42, Kohno discloses a computer network interface wherein determining the state of connections between each pair of network nodes comprises determination of whether each node in a pair of network nodes can send data to the other node and can receive data from the other node in the pair. Kohno states the use of an abnormal test circuit to check if the transmission line is normal or operable, thus determining whether each node in a pair can send and receive data to the other (see column 2 lines 58-69 and column 3 lines 1-4). Upon determination that the transmission line between a pair is abnormal or inoperable, it is understood that data cannot be sent and received between each node in the pair.

In regards to claims 43-51, see basis for rejection for claims 1-9, respectively. Claims 43-51 are simply a machine readable medium with instructions thereon for implementing the method set forth in claims 1-9, respectively, and therefore is necessarily included in the teachings of Kohno.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 41, and 52 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kohno in further view of U.S. Patent No. 6,434,117 of Momona.

In regards to claim 10, Kohno discloses all the claimed subject matter except a method wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes and selecting a connection for sending and receiving data from an intermediate node to a second node

However, Momona discloses a method wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes and selecting a connection for sending and receiving data from an intermediate node to a second node. He discloses the use of one or more intermediate nodes as a repeater (see figure 1 and column 4 lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a method wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes and selecting a connection for sending and receiving data from an intermediate node to a second node. A person of ordinary skill in the art would have been motivated to make the modification because Kohno discloses the use of repeaters and having intermediate nodes wherein each intermediate node acts as repeaters,

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as per teachings of Momona, would lessen distortion or even possibly remove the need to have repeaters per transmission line between each node.

In regards to claim 41, Kohno discloses all the claimed subject matter except a computer network interface wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes and selecting a connection for sending and receiving data from an intermediate node to a second node. However, Momona discloses a computer network interface wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes and selecting a connection for sending and receiving data from an intermediate node to a second node. He discloses the use of one or more intermediate nodes as a repeater (see figure 1 and column 4 lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a computer network interface wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes and selecting a connection for sending and receiving data from an intermediate node to a second node. A person of ordinary skill in the art would have been motivated to make the modification to Kohno because Kohno discloses the use of repeaters and having intermediate nodes wherein each intermediate node acts as repeaters, as per teachings of Momona, would lessen distortion or even possibly remove the need to have repeaters per transmission line between each node.

In regards to claims 52, see basis for rejection for claims 10, respectively. Claims 52 are simply a machine readable medium with instructions thereon for implementing the method set forth in claims 10, respectively, and therefore is necessarily included in the teachings of Kohno in further view of Momona.

(11) Response to Argument

102 rejection:

Applicant argues: "The office action states that the claimed limitation 'selecting either the primary network connection or the redundant network connection' is anticipated by Kohno, which is not capable of performing the recited selection or sending data over only one of its two connections".

Examiner interprets "selecting either the primary network connection or the redundant network connection" as selection the primary connection, the redundant connection, or both connections, but not neither connection. As Kohno teaches selecting the primary network connection, regardless if he also selects the secondary primary network, the limitation is met. This reasoning is supported by Boolean logic, wherein "AorB" defines the instances of A, B, and AandB as being true and the instance of notA notB as being false, which is disclosed in the truth table below

| A | B | A or B |
|---|---|--------|
| F | F | F |
| T | F | T |
| F | T | T |
| T | T | T |

Since at least one connection has been selected, Kohno meets the limitation "selecting either the primary network connection or the redundant network connection for sending and receiving data between each pair of network nodes".

Furthermore, Kohno states that "a transmission signal is transmitted through all of a plurality of transmission lines.... a receiving signal transmitted through any of the transmission line which is normal is selectively received" (see abstract). Kohno also discloses "...a changeover switch so that one of the transmission signals transmitted by the other stations

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through the transmission lines A and B can be received as a receiving signal” (see column 2 lines 50-55). In other words, *more than one transmission line is used for sending data, but data is received from only one selected transmission line*. Thus, only one line is being selected for both sending and receiving data between the pair of network nodes. Since the applicant claims “selecting either the primary network connection or the redundant network connection *for sending and receiving* data between each pair of network nodes”, and Kohno teaches only one line is being selected for sending and receiving data between the pair of network nodes, *the limitation is meant when interpreting Either-or as selecting “at least one” or “only one”*.

103 rejection:

Applicant argues claims 10, 41, and 52: “Momona fails to consider redundant networking, and fails to consider routing data through an intermediate node in a redundant network to provide communication between two nodes. Momona therefore fails to select a connection at all, much less selecting a connection from an originating node to an intermediate node and again selecting a connection to from an intermediate node to a destination node.

...

Motivation to combine the references was cited in a prior Office Action as being to “lessen distortion”, which is alleged in the prior Office Action to be present in some unspecified location in Momona. The present invention does not adapt a simple repeater, to reduce distortion, but recites separate selection processes for selecting connections leading to and from an intermediate node for routing data in a network. The present invention is therefore not simply a repeater designed to reduce some sort of distortion, but employs intermediate nodes to enhance

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routing flexibility and network operability as various links between nodes fail. The cited motivation is therefore not applicable to the recited structure and function of the present invention. “

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Kohno teaches redundant networking and selecting a connection from one node to another, but fails to disclose an intermediate node. By incorporating repeaters, which constitute as intermediate nodes, as per teachings of Momona, wherein the originating node would have to send data to the repeater and the repeater sending data to the destination node, indicating selecting a connection from an originating node to an intermediate node and again selecting a connection to from an intermediate node to a destination node, Kohno in view of Momona teaches the limitation set forth.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, incorporating repeaters as immediate node, as per teaching of Momona, would lessen distortion. Kohno has disclosed the use of repeaters, which constitutes as intermediately nodes,

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(see fig 3 and column 3 lines 35-42), but fails to explicitly disclose the use of the repeaters or intermediate nodes between each pair of network nodes, as cited in the claim. However, Monoma discloses having repeaters as intermediate nodes (see column 4 lines 8-11). A person of ordinary skill in the art would have been motivated to make the modification to Kohno because Kohno discloses the use of repeaters (see fig 3 and column 3 lines 35-42) and having repeaters or intermediate nodes between each pair of the nodes would lessen distortion of signals between two nodes. Repeaters, by definition, are used to lessen distortion.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

ecp
January 13, 2004

Conferees

Robert Beausoliel and Nadeem Iqbal



HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245


ROBERT BEAUSOLIEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100